User Manual

DCS-5230L

Version 1.0

D-Link®

mydlink™ enabled

SURVEILLANCE

Wireless N Pan/Tilt Network Camera

Manual Overview

This manual contains the following sections:

Section 1 - “Product Overview” describes what is included with the DCS-5230L camera, and things to consider before installing (page 1).

Section 2 - “mydlink Portal” provides detailed information on usage and configuration of your product with www.mydlink.com.

Section 3 - “Installation” describes how to install the camera on your network (page 12).

Section 4 - “Configuration” describes how to configure the settings on your DCS-5230L camera (page 16).

Section 5 - “Troubleshooting” explains how to resolve common issues (page 43).

Section 6 - “Appendix” contains special procedures and technical specifications (page 45).

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Manual Revisions

Revision	Date	Description
1.0	June 29, 2010	• DCS-5230L Revision A1 with firmware version 1.00

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Table of Contents

Product Overview

Congratulations on your purchase of the DCS-5230L Network Camera. The DCS-5230L is a versatile and unique solution for your small office or home. Unlike a standard webcam, the DCS-5230L is a complete system with a built-in CPU and web server that transmits high quality video images for security and surveillance. The DCS-5230L can be accessed remotely, and controlled from any PC/Notebook over your local network or through the Internet via a web browser. The simple installation and intuitive web-based interface offer easy integration with your Ethernet/Fast Ethernet or 802.11g/n wireless network. The DCS-5230L also comes with remote monitoring and motion detection features for a complete and cost-effective home security solution.

- Remotely monitor your home or office over the Internet
- Web-based Recording to a PC's local hard drive – no software required
- Mydlink-enabled technology simplifies setup by automatically configuring network settings
- Motion detection to trigger recording and send e-mail alerts
- DDNS support for web access using an easy-to-remember domain name
- Administrator/User password protection
- UPnP support for easy network setup and configuration
- 1 lux CMOS sensor for low-light environments
- 3GPP mobile surveillance
- Simultaneous MJPEG and MPEG-4 streams allows optimization of both image quality and bandwidth efficiency
- 802.11g/n wireless connectivity
- WPS support for easy wireless network setup

Features

- **Simple to Use:** The DCS-5230L is a stand-alone system with a built-in CPU, requiring no special hardware or software such as PC frame grabber cards. Setup is simple with mydlink-enabled technology, which helps automatically configure your camera's network settings, and eliminating the need to set complicated settings on your router.
- **Supports a Variety of Platforms:** Supports TCP/IP networking, HTTP, and other Internet related protocols. It can also be integrated easily into other Internet/Intranet applications because of its standards-based features.
- **Remote Snapshot Images and Recording:** Using the snapshot and recording features, you can save snapshots and record video and audio directly from the Web browser to a local hard drive without installing any software, making it convenient to instantly capture any moment from a remote location.
- **Record Directly to a NAS:** The DCS-5230L allows you to record directly to a local network area storage device without the use of a dedicated PC for storing recorded video.
- **Low Light Recording:** The DCS-5230L's 1 lux light sensitivity allows you to capture video in rooms with minimal lighting, making it ideal for use in low-light environments.
- **Web Configuration:** Using a standard Web browser, administrators can configure and manage the Network Camera directly from its own Web page via Intranet or Internet. This means you can access your DCS-5230L anytime from anywhere in the world!
- **Broad Range of Applications:** With today's high-speed Internet services, the DCS-5230L Network Cameras can provide an ideal solution for live video over the Intranet and Internet for remote monitoring. They allow remote access from a Web browser for live image viewing and management of the Network Cameras anytime, from anywhere in the world. The Network Cameras have a wide range of applications, including industrial and public monitoring of homes, offices, banks, hospitals, child-care centers, and amusement parks.
- **802.11n Wireless Connectivity:** The DCS-5230L offers both 802.11n wireless and Ethernet/Fast Ethernet connectivity, making the DCS-5230L easy to integrate into your existing network environment. The DCS-5230L works with a Gigabit Ethernet based network for traditional wired environments and also works with 802.11g/n/b routers or access points for added flexibility.

Package Contents

DCS-5230L Network Camera	
Power Adapter	
CAT5 Ethernet Cable	
Quick Installation Guide	
CD-ROM	
Screw and wall mount kit	

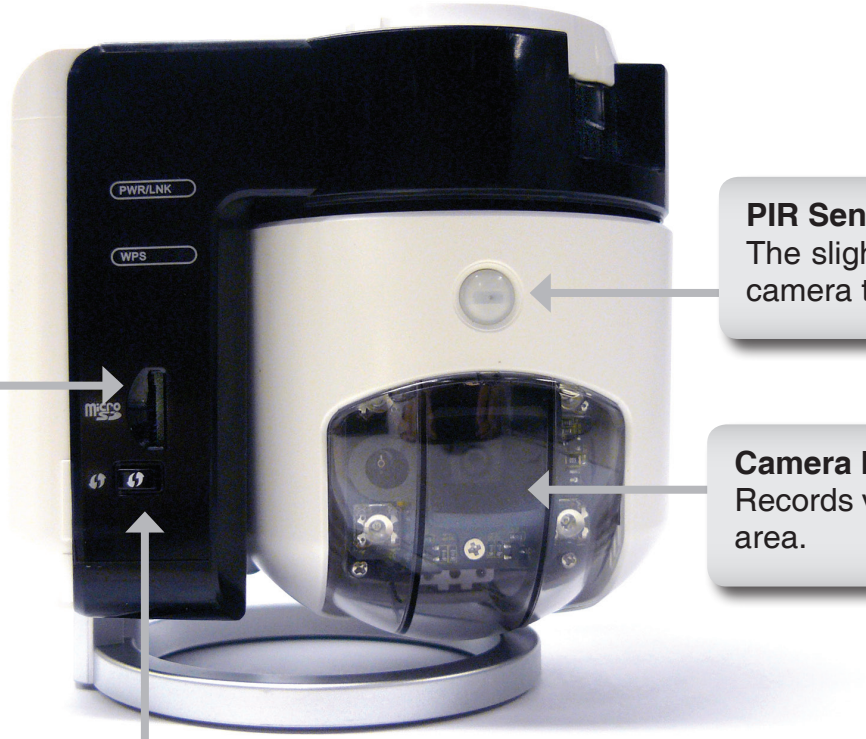
If any of the above items are missing from your package, please contact your retailer.

Note: *Using a power supply with a different voltage rating than the one included with the DCS-5230L will cause damage and void the warranty for this product.*

System Requirements

Network Requirements	• Wired (10/100/1000 Fast Ethernet) network • Wireless 802.11g/n network
CD Setup Wizard Requirements	• An Internet connection • A router connected to your broadband modem **Computer with the following:** • A PC with a wired connection to your router • Windows® 7, Vista® (32/64-bit), or XP installed • Internet Explorer 6 or higher with ActiveX controls enabled
Web-based Configuration Utility Requirements	**Computer with the following:** • Windows® based operating system • An installed Ethernet adapter **Browser Requirements:** • Internet Explorer 6.0 or higher • Firefox 3.0 or higher • Safari 3.0 or higher **Windows® Users:** Make sure you have the latest version of Java installed. Visit www.java.com to download the latest version.
myDlink Website Requirements	• Subscription with an Internet Service Provide (ISP) with 256 Kbps minimum for remote video viewing • Computer with: Microsoft Internet Explorer 6 or higher with ActiveX Support

Hardware Overview
Front



PIR Sensor
The slightest motion will trigger the camera to record.

Micro SD
Insert the Micro SD card into the DCS-5230L.

Camera lens
Records video from the surrounding area.

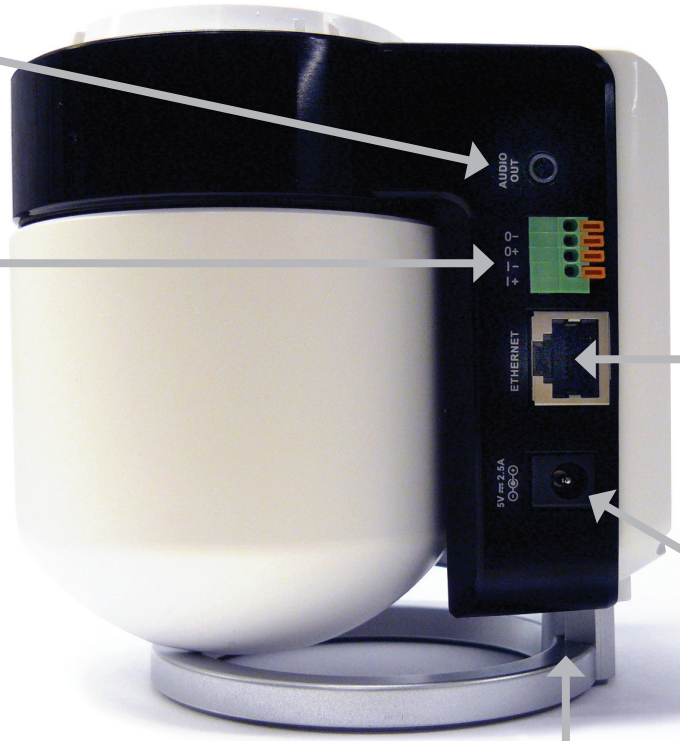
WPS Button
Allows you to connect to a WPS router.

Hardware Overview

Back

Microphone Connector
Connect a microphone to hear audio from the area surrounding your camera.

I/O Connector
Connect an I/O cable to the DCS-5230L.



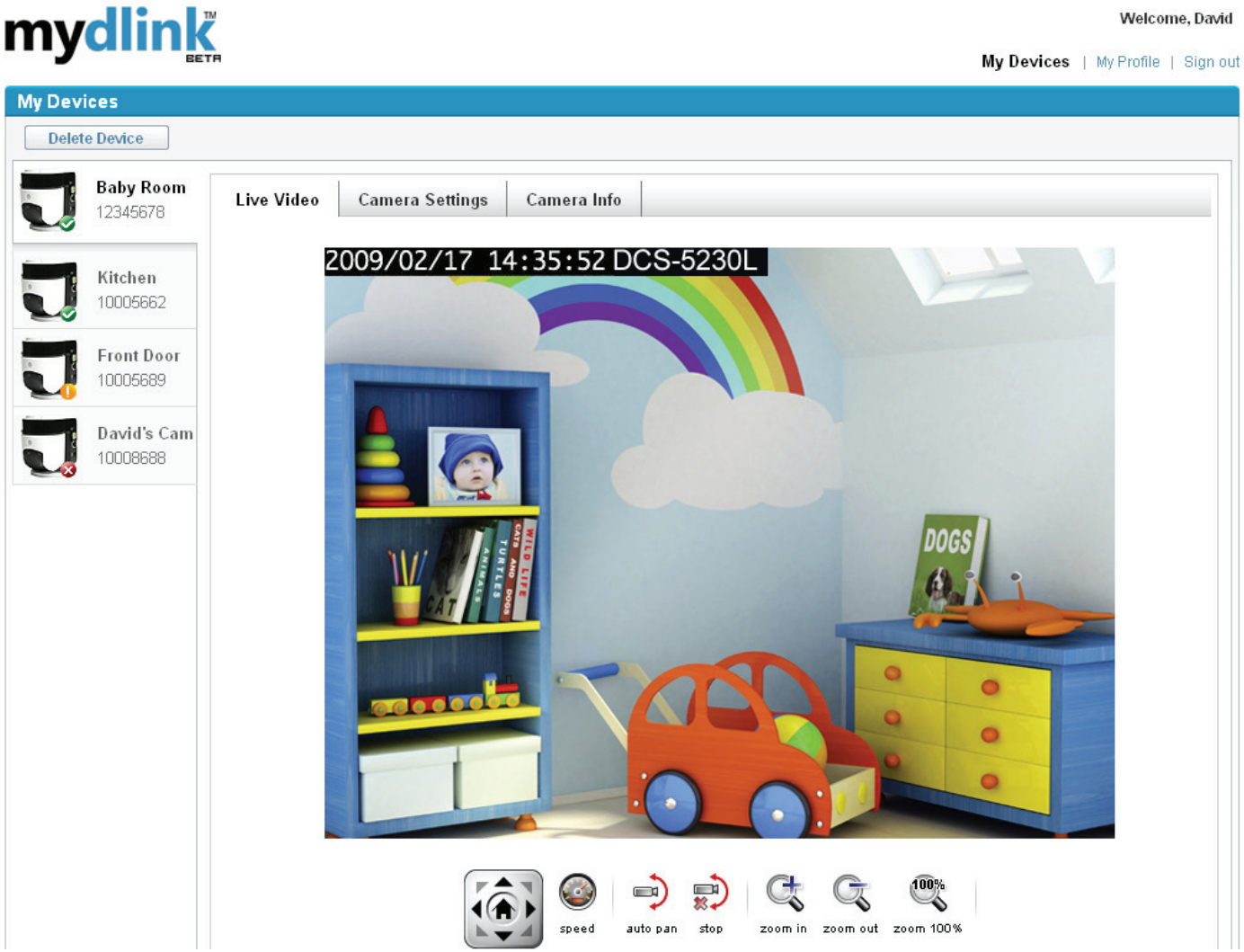
Ethernet port
Connects to a PC or network through an Ethernet connection.

Power jack
Connects to the power adapter.

Camera base
Allows you to attach the camera base or another mounting unit.

mydlink Portal

After registering your DCS-5230L camera with a **mydlink** account in the Camera Setup Wizard. You will be able to remotely access your camera from the www.mydlink.com website. After signing in to your **mydlink** account, you will see a screen similar to the following:



Camera Status

Here, you can see the online status of each of your cameras. Your online status may be one of the following:

A green checkmark indicates that your camera is online and ready to use.

A yellow exclamation point indicates that your camera is online, but the camera password has changed. You will need to enter your new camera password to access your camera again.

A red x indicates that your camera is offline and currently cannot be accessed remotely.

If your camera is offline, try the following:

- Check to make sure that the Internet connection to your camera is working properly.
- Try restarting your Internet router.
- Check your camera's cable connections and make sure they are secure.
- Check to make sure that the LED on your camera is lit solid green.

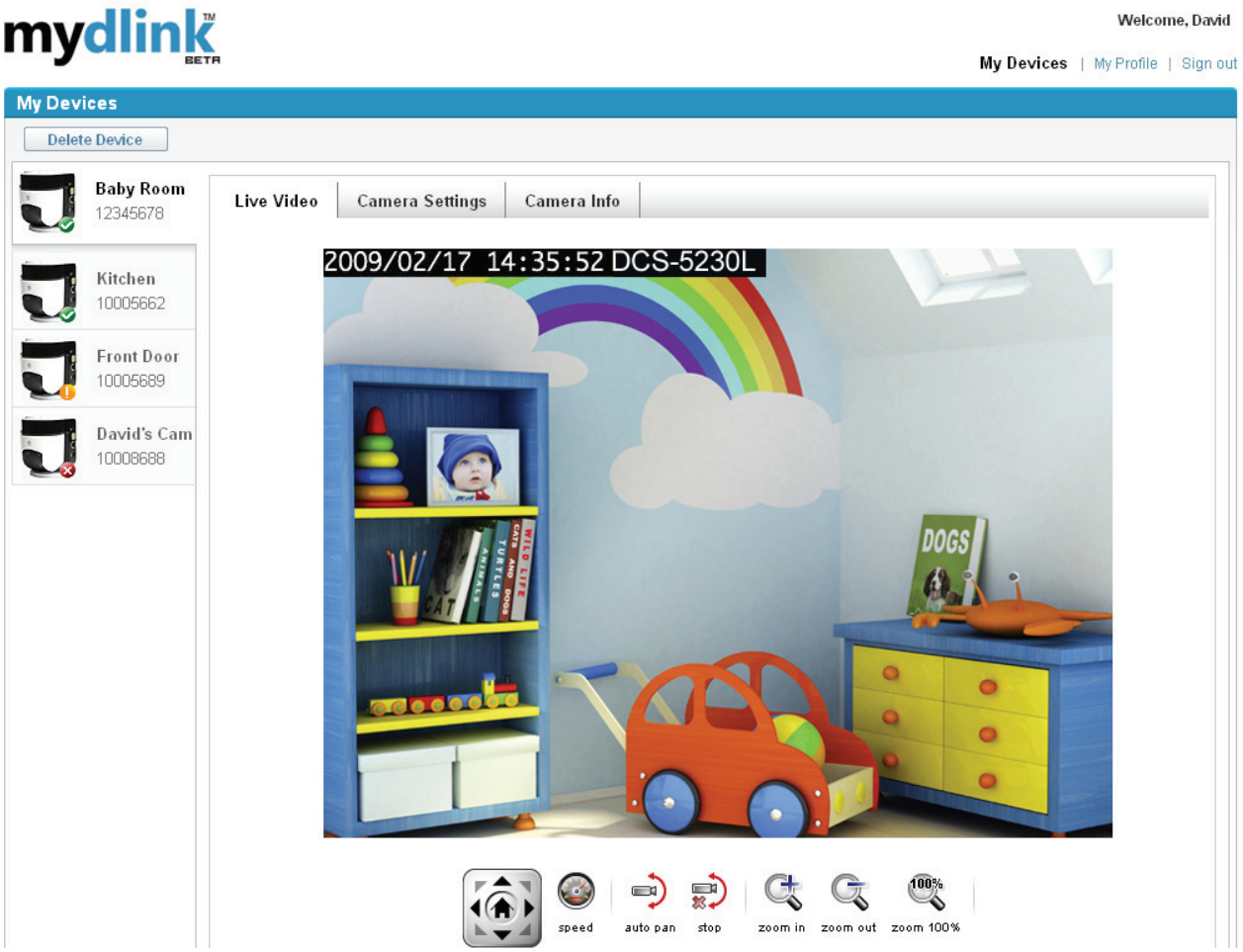
If you still cannot access your camera, reset your camera and run the Camera Setup Wizard again from the CD-ROM included in your package.

Live Video

In the main part of the screen, the Live Video tab will be selected by default. If the camera is available, a Live Video feed will be displayed. Video will be shown at VGA resolution (640x480) if viewing your camera from a PC on the same local network, or at QVGA resolution (320x240) if viewing your camera from a PC on a remote network.

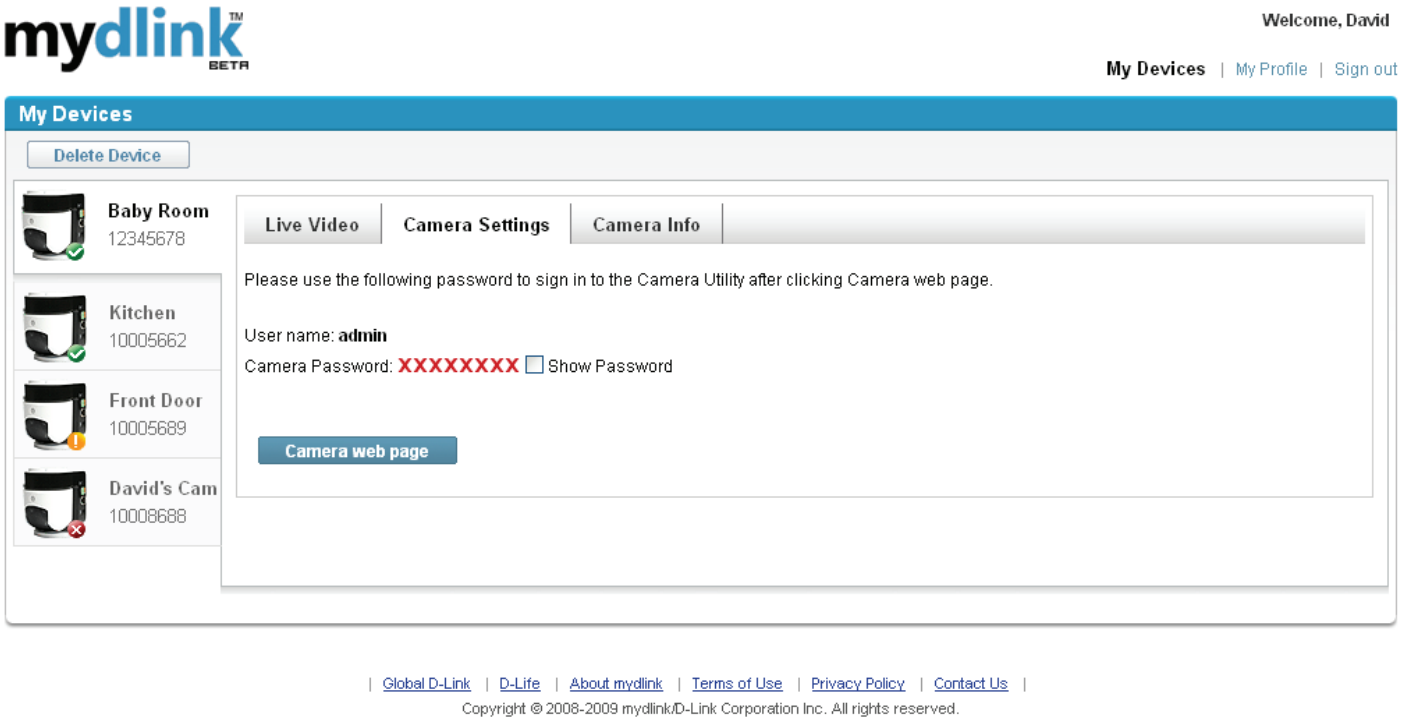
Note: If your router does not support UPnP, there will be a 60 second time limit when viewing your camera remotely.

Maxmium only allow 3 views for video feed at a time.



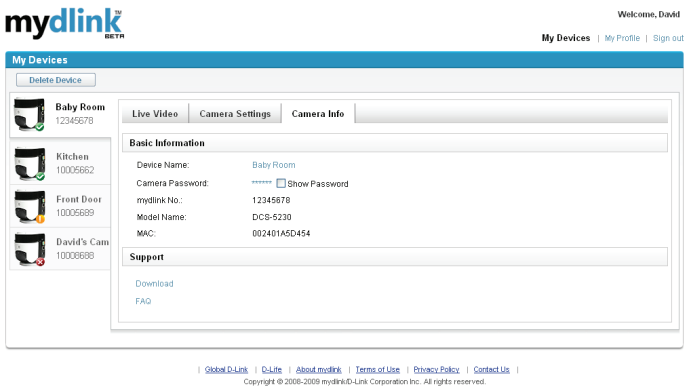
Camera Settings

The Camera Settings tab allows you to access your camera's configuration interface. To open your camera's configuration interface, click **Camera web page** and enter the password exactly as listed on the Camera Settings page.



Camera Info

The Camera Info tab shows you various information about your camera.



Device Name: The Device Name is a unique name that you can give to your device to help you identify it. Clicking on the **Device Name** will open a window for you to log in to your camera's configuration interface. This will then open the Maintenance > Admin page where you can change your Device Name.

Camera Password: This shows you the current password for your camera's configuration interface. Clicking on the **Show Password** checkbox will either show or hide the password. Clicking on the **Password** will open a window for you to log in to your camera's configuration interface. This will then open the Maintenance > Admin page where you can change your Password.

mydlink No.: This shows you the mydlink number of your device.

Model Name: This shows you the model name of your device.

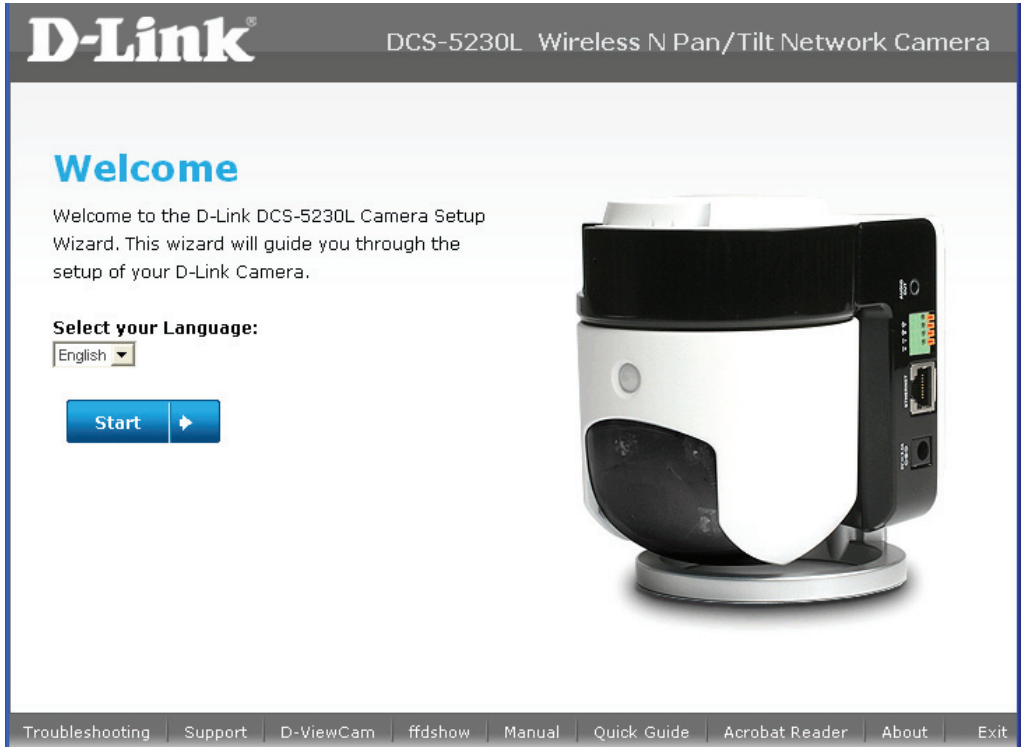
MAC Address: This shows you the MAC address of your device.

Support: This section provides you with links to various support websites and downloads related to your product.

Installation
Starting the Camera Setup Wizard

Insert the Installation CD-ROM into your computer's CD-ROM drive to start the autorun program.

The CD-ROM will open the Camera Setup Wizard. Simply click **Start** to go through the Setup Wizard, which will help you through the entire installation process from connecting your hardware to configuring your camera.



Hardware Installation

Connect the Camera to the Camera Base

Screw the camera base into the mounting point on the bottom of the DCS-5230L camera with a coin or screwdriver.

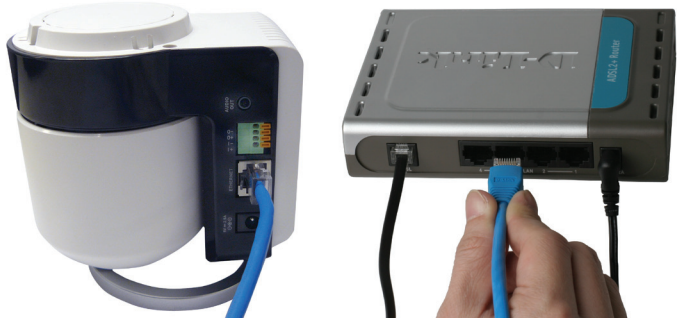
Inserting a Micro SD Card

Insert your Micro SD card into the Micro SD card slot on the DCS-5230L.

Connect the Ethernet Cable

Connect one end of the blue ethernet cables included in your package to the ethernet port on the back of the DCS-5230L camera. Connect the other end of the cable to an available LAN port on your router or broadband modem.

Connecting to a router

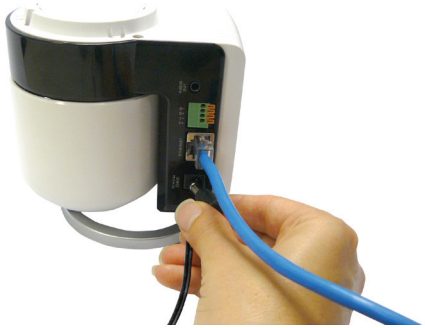


Connecting to a broadband modem

Connect the Power Adapter

Attach the power adapter to the power jack located on the back of the DCS-5230L and connect the power adapter to a power outlet. After connecting the power adapter, you should see the status LED on the front of the camera turn on.

The status LED will light red when it receives power, will light green after the camera connects to the network, and will flash green when the camera is being accessed.



Connect to a Wireless Network Using WPS

If your router supports WPS connection, you can connect your camera using the WPS button on the camera.

Press and hold the WPS button on the side of the camera for three seconds. The status LED on the front of the camera will turn blue.

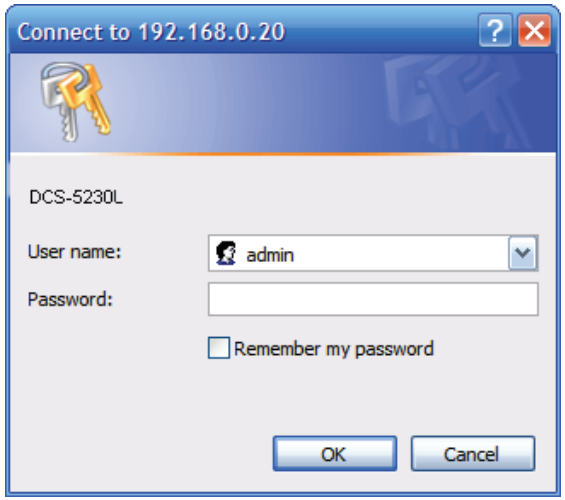
Press the WPS button on your router within 60 seconds. The WPS button is usually on the front or side of your router. On some routers, you may need to log in to the web interface and then click on an onscreen button to activate the WPS feature. If you are not sure where the WPS button is on your router, please refer to your router's User Manual.

The DCS-5230L will then automatically create a wireless connection to your router. While connecting, your camera's LED will flash and then your camera will reboot. After rebooting, the status LED on the front of the camera will turn solid green.

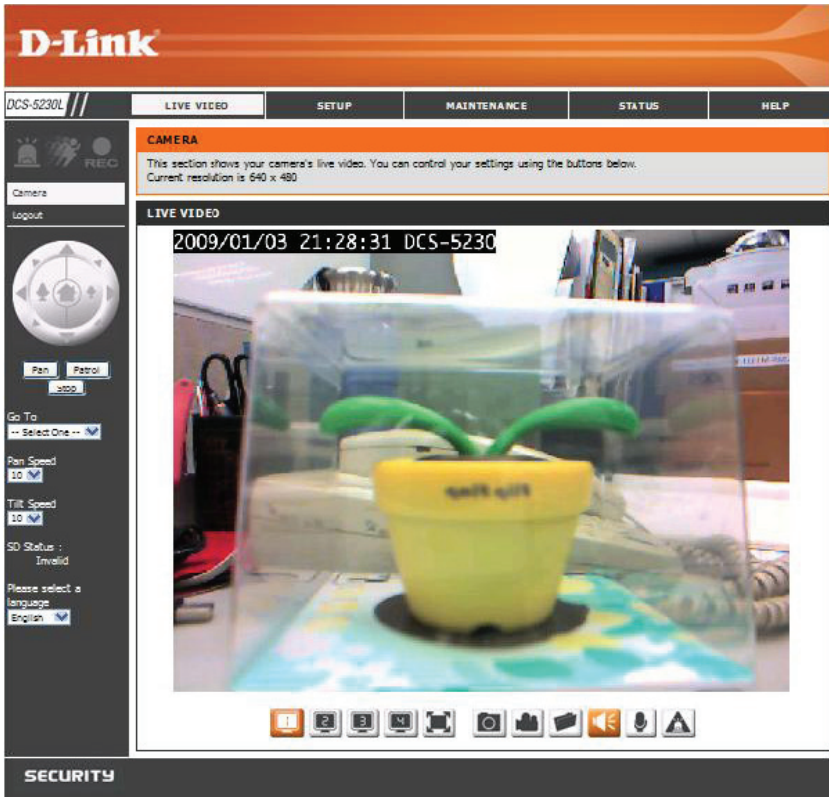
Using the Configuration Menu

After completing the Camera Setup Wizard, you are ready to use your camera. The camera's built-in Web configuration utility is designed to allow you to easily access and configure your DCS-5230L. At the end of the wizard, click **Go To Camera**, or enter the IP address of your camera into a web browser, such as Internet Explorer®. To log in, use the User name **admin** and the password you created in the Setup Wizard. If you did not create a password, the default password is blank. After entering your password, click **OK**.

Note: *If you are directly connecting your PC to the camera, or if you or using the camera on a closed network, the default IP is* ***192.168.0.20****.*



Web-based Configuration Utility



Use the following sections to set up and configure your network camera:

- LIVE VIDEO
- SETUP
- MAINTENANCE
- STATUS
- HELP

Live Video

Camera

This section shows your camera's live video and event indicators. You may select the available thumbnails for your options of predefined Video Profile, Full Screen mode, and action items of taking Snapshot, Recording, Set Storage Folder, Listen, Talk, Digital Output, and IR LED. You may also select your language setting using the drop-down menu.

You can remotely rotate, pan and tilt the camera pointing direction. In addition, you can also zoom in and out of the live video image using the controller. The pan/tilt speed can be adjusted on this page, and the "Go To" position can be configured at the Setup > Preset Position page.

Start/Stop Audio: This button toggles the built-in microphone on and off, allowing you to hear audio from the area surrounding your camera. Audio is on by default.

Start/Stop Talking: This will toggle audio to a speaker (not included) connected to the camera's Audio Out port. This can be used to communicate with others near the camera.

Start/Stop Digital Output: This button will toggle the digital output on or off.

P/T/Z Action Pad: Use the **Pan / Tilt / Zoom** Action Pad to control the camera's pan or tilt. The large tree icon controls the zoom in function. The small tree icon on the right side controls the zoom out function. The **Home** button can move the camera to the preset home position.

Go To: Select from the preset drop-down list to quickly move the camera to the desired preset position. (Please refer to "camera control" setup for the preset list function).

Pan/Tilt Speed: This setting can change the camera's Pan/Tilt speed.

Pan: Press this button and the camera will pan from left-most position to the right-most position and then return to its original position.

Stop: This will stop pan and patrol.

Patrol: Click this button to quickly move the camera to the desired patrol setup according to preset positions. (Please refer to "camera control" setup for the preset list function).

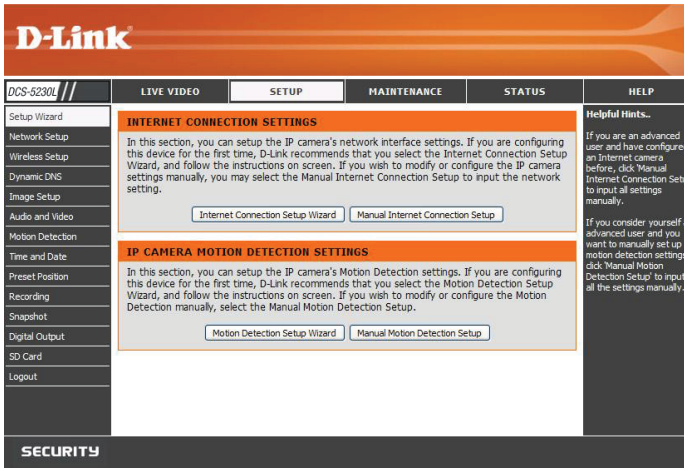
The bottom of this page contains several icons which can be used to control the camera's main functions.

Setup

Wizard

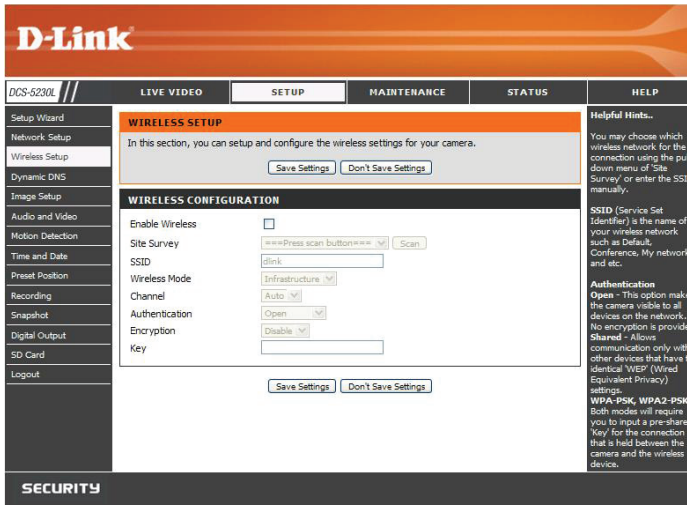
The setup wizard guides you through the initial setup of your IP camera. You can use the **Internet Connection Setup Wizard** for initial network setup, and you can use the **Motion Detection Setup Wizard** to set up motion detection. Simply follow the instructions given in each step of the wizard to quickly set up your camera.

Alternatively, you can manually set up your Internet connection by clicking **Manual Internet Connection Setup**, and you can manually set up motion detection options by clicking on **Manual Motion Detection Setup**. You can also see these settings by clicking on the menu on the left panel (**Network Setup** / **Wireless Setup** / **Motion Detection** / **Snapshot**).



Network Setup

This section allows you to configure your LAN and Internet configuration.



DHCP Connection: This allows your camera to get an IP address automatically from your router or Internet service. If you are not sure which LAN settings to use, try using DHCP mode first.

Static IP Address: This allows you to manually set the IP address information for your camera.

IP Address: Enter the IP address the camera should use.

Subnet Mask: Enter the subnet mask that the camera should use.

Default Gateway: Enter the default gateway that the camera should use.

Primary DNS: Enter the IP address of the primary DNS server that the camera should use.

Secondary DNS: Enter the IP adress of the secondary DNS server that the camera should use.

Note: *If you need to use a static IP address and you do not know the network information, contact your Internet Service Provider (ISP) for assistance.*

Enable UPnP: Universal Plug & Play (UPnP) allows Windows PCs to find this camera under “Network Neighborhood” without configuration.

Enable PPPoE: If you are using a PPPoE connection, enable it and enter the **User Name** and **Password** for your PPPoE account. You can get this information from your Internet service provider (ISP).

HTTP Port: This is the port that allows the user to connect to the camera’s user interface. By default the port is set to 80. You may change the port number if using multiple cameras.

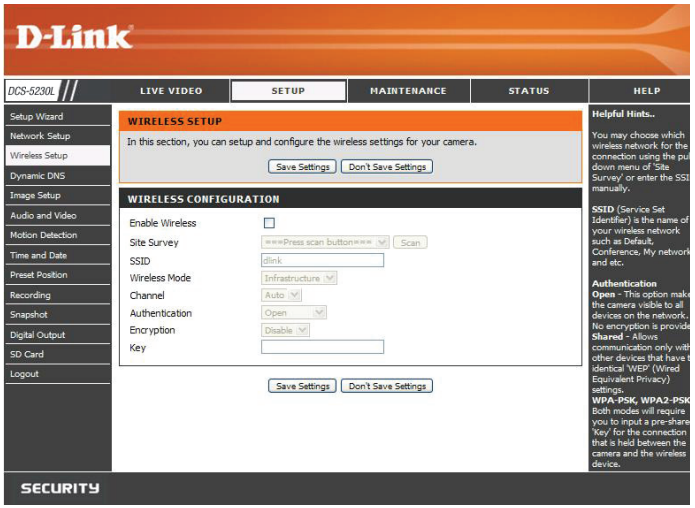
RTSP Port: This is the port that you use for RTSP streaming to mobile devices or PDAs. By default the port is set to 554. You may change the port number if using multiple cameras.

Note: *You MUST also set up your router/gateway for Port Forwarding/Mapping; this will enable remote viewing of your camera via the Internet. Please refer to your router’s instruction manual on how to open up ports. For additional help on configuring your camera to work with your router, please refer to* ***Appendix A: Installing the DCS-5230L on a Router Without UPnP*** *on page 44. For installing multiple cameras, ONE port per camera must be opened on your router, the Web server (HTTP) port. Also, some browsers may restrict some ports, such as 1 or 22, for security purposes. If you have problems accessing your camera through HTTP, try using a port higher than 1024.*

After making any changes, click the **Save Settings** button to save your changes, or click the **Don’t Save Settings** button to discard your changes.

Wireless

To set up your IP camera's wireless network interface settings, enable **Wireless Settings** in this window first. Then continue the further configuration next.



Site survey: Click the **Rescan** button to scan for available wireless networks. After scanning, you can use the dropdown box to select an available wireless network. The related information (SSID, Wireless Mode, Channel, Authentication, Encryption) will be automatically filled in for you.

SSID: The SSID of the wireless access point you wish to use.

Wireless Mode: Use the dropdown box to select the mode of the wireless network you wish to connect to. **Infrastructure** is normally used to connect to an access point or router. **Ad-Hoc** is usually used to connect directly to another computer.

Channel: If you are using Ad Hoc mode, select the channel of the wireless network you wish to connect to, or select **Auto**.

Authentication: Select the authentication you use on your wireless network - **Open**, **Shared (WEP)**, **WPA-PSK**, or **WPA-PSK2**.

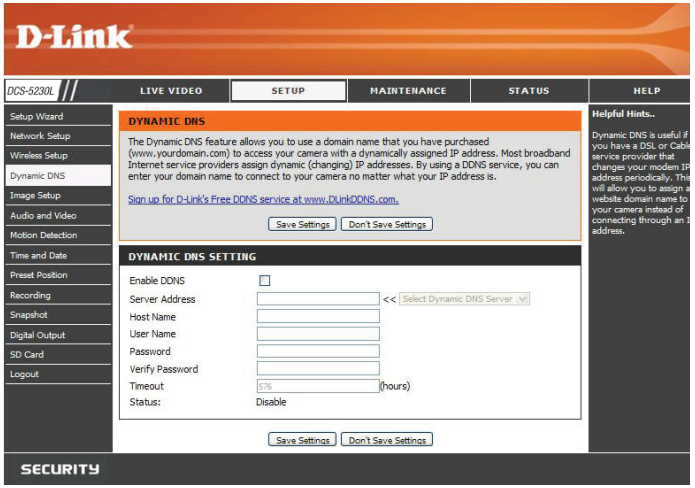
Encryption: If you use **WPA-PSK** or **WPA-PSK2** authentication, you will need to specify whether your wireless network uses TKIP or AES encryption. If you use **Open** or **Shared** authentication, this setting will be automatically set for you.

Key: If you use **WEP, WPA-PSK**, or **WPA-PSK2** authentication, enter the **Key** (also known as password) used for your wireless network.

After making any changes, click the **Save Settings** button to save your changes, or click the **Don't Save Settings** button to discard your changes.

Dynamic DNS

If you have a DSL or Cable service provider that changes your modem IP address periodically, Dynamic DNS (Domain Name Service), a method of keeping a domain name linked to a dynamic IP address, is useful. With most Cable and DSL connections, you are assigned a dynamic IP address and that address is used only for the duration of that specific connection. With the DCS-5230L, you can set up your DDNS service and the DCS-5230L will automatically update your DDNS server every time it receives a different IP address. Depending on the service, this update may take a few hours.



Enable DDNS: Check this checkbox to enable the DDNS function of the camera.

Server Address: Use the dropdown box on the right to select a DDNS service.

Host Name: Type in the Host Name of the DDNS service.

User Name: Enter your User Name for the DDNS service.

Password: Enter the password for the DDNS service.

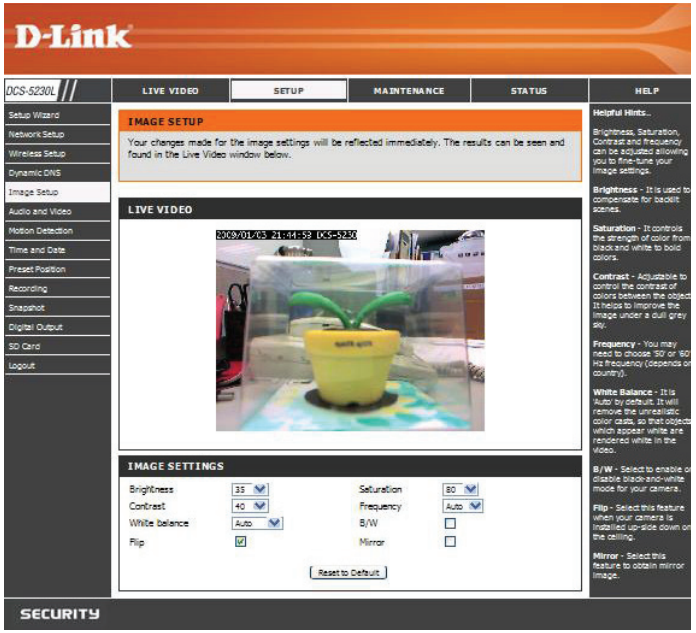
Verify Password: Retype the password for the DDNS service.

Timeout: This sets the number of hours between DDNS updates.

After making any changes, click the **Save Settings** button to save your changes, or click the **Don't Save Settings** button to discard your changes.

Image Setup

The options in **Image Setup** allow you to adjust the settings for your IP camera sensor and image.



Brightness: This adjusts the brightness of the camera image. This is set to 60 by default.

Saturation: This adjusts the color saturation of the camera image. This is set to 60 by default.

Contrast: This adjusts the contrast of the camera image. This is set to 0 by default.

Frequency: This option adjusts the camera sensor's setting to avoid the image flickering under certain light sources, such as florescent lights. This is set to **Auto** by default.

White balance: You can change the white balance of the camera image by selecting a setting from the dropdown box. This is set to **60Hz** by default.

B/W: Ticking this checkbox will change the camera image into black and white.

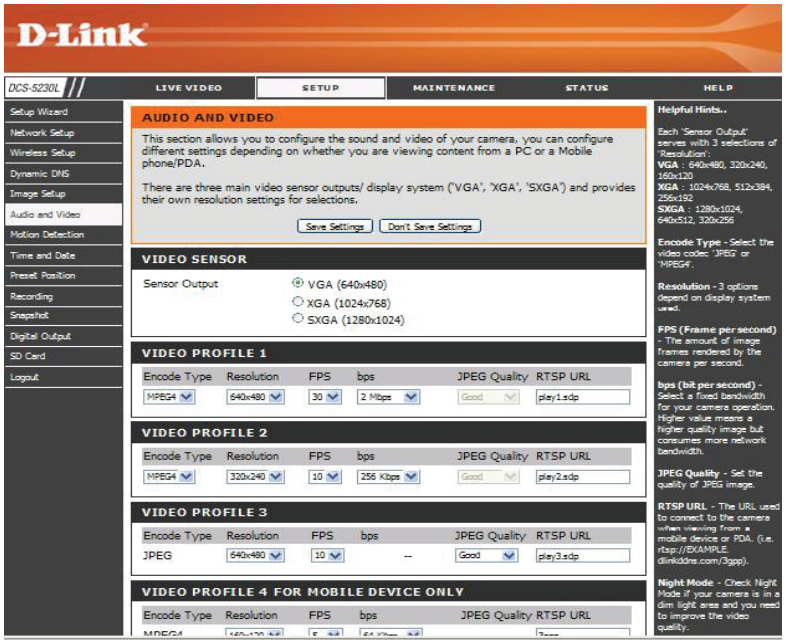
Flip: This will flip the image vertically.

Mirror: This will flip the image horizontally in such a way that your left side will be on the left side of the screen and vice versa.

***Note: Mirror** and **Flip** can be used if you choose to mount the DCS-5230L upside down on the ceiling.*

Audio and Video

You may configure four video profiles with different settings for your camera. You may also set up different profiles for your computer and mobile display. In addition, you may configure the audio (speakers and microphone) settings for your camera. There are three sensor output selections (VGA, XGA, and SXGA). Do not select SXGA if you want to turn on the motion detection feature.



Encode Type: This sets the video codec used for the video stream. You can choose MPEG-4 or MJPEG (JPEG). Internet Explorer browsers can view both MPEG-4 and MJPEG video streams, and non-IE browsers can only view MJPEG video streams.

Resolution: This sets the display resolution of the video stream. If the Resolution is different than the Sensor Output size, the video will be shrunken or enlarged to the Resolution size you set here.

FPS: This sets the target number of frames per second (FPS) for the video stream. Higher frame rates will provide smoother video.

bps: This sets the target bitrate of the video stream. Higher bitrates will provide better quality video. When the Encode Type is set to MJPEG, you cannot change the bps setting. Also, available bps settings may change depending on what the Encode Type, Sensor Output, Resolution, and FPS settings are set to.

JPEG Quality: This sets the JPEG quality of any manual snapshots you take when this video profile is selected

RTSP URL: This setting allows you to set a suffix for your camera's RTSP URL so you can view your camera's video with this video profile's settings. For example, if you enter "mpeg4" as your RTSP URL setting and your camera's IP is 192.160.0.30, you can view your camera's video with these settings through 192.160.0.20/mpeg4.

Note: *Video Profile 3 is always set to MJPEG as the Encode Type to ensure that at least one of the Video Profiles are viewable by non-IE browsers. Video Profile 4 is for mobile devices only, and always uses MPEG-4 as the Encode Type.*

Enable Night Mode: Check this box to enable Night Mode. Night mode allows the camera to use a longer shutter speed when the camera is in a low-light environment. If the camera is in an area where there is sufficient lighting, Night Mode will not affect the video stream.

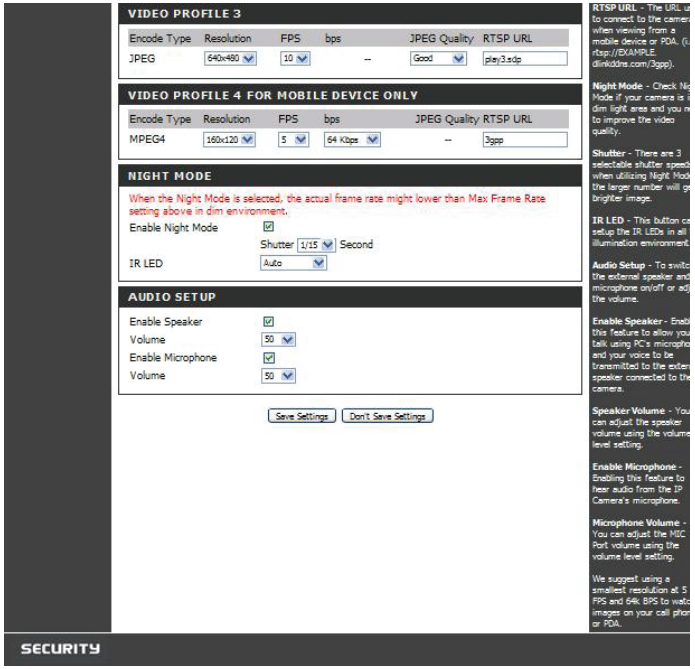
Shutter: This sets the longest shutter speed Night Mode will use when Night Mode is enabled and the camera is viewing a low-light scene.

IR LED: This button can setup the IR LEDs in all the illumination environment or auto detect by light and PIR sensor. **Note that the live video will turn to black and white mode when IR LEDs turned on.**

Enable Speaker: Checking this box will allow you to talk using the PC's microphone.

Enable Microphone: Checking this box will enable you to listen to audio picked up by the camera's microphone. This will allow you to hear what is happening near your camera.

Volume: This sets the volume level of the incoming audio.

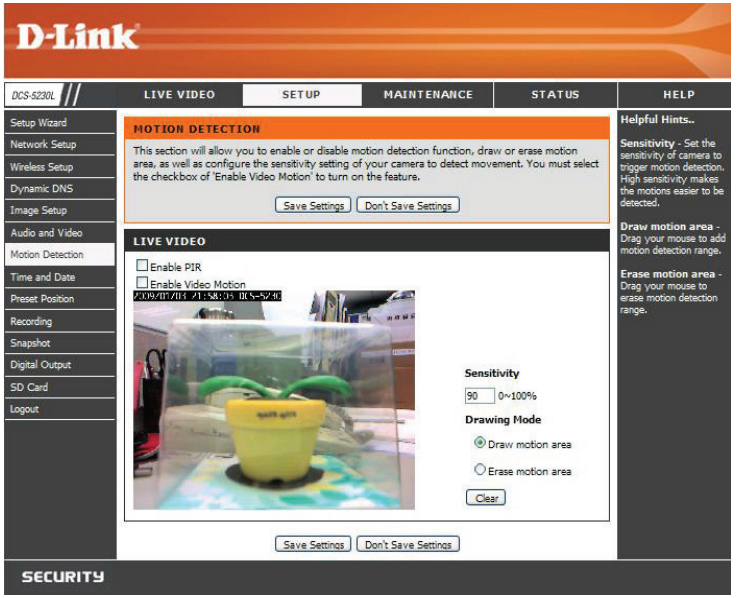


Note: *Higher frame size, frame rate and bit rates will give you better video quality, but they will also require more network bandwidth. For best viewing results on a mobile phone, we suggest setting the frame rate to 5fps and the bit rate to 20 Kbps.*

After making any changes, click the **Save Settings** button to save your changes, or click the **Don't Save Settings** button to discard your changes.

Motion Detection

This option allows you to set up Motion Detection on your IP camera. In order to use motion detection you must first check the **Enable Video Motion** checkbox. You can then click on the video window and draw motion detection zones by clicking and dragging your mouse. Red areas indicate areas that will be monitored for motion. The camera also has a PIR sensor which is used to detect motion using a special infrared sensor. PIR is good at detecting motion from live subjects such as people and animals.



Enable PIR: Click this box to enable the PIR sensor.

Enable Video Motion: Click this box to enable video motion detection.

Sensitivity: This setting adjusts how sensitive the camera will be to motion, where 100% will be the most sensitive setting and 0% will be the least sensitive setting.

Draw Motion Area: This will allow you to draw motion detection zones when clicking and dragging, or erase motion detection zones when clicking and dragging depending on which option you have selected.

Erase Motion Area: Clicking this button will clear all motion detection zones.

After making any changes, click the **Save Settings** button to save your changes, or click the **Don't Save Settings** button to discard your changes.

Note: If the camera is set to SXGA mode in Audio and Video, Motion Detection is disabled.

The red grid on the right indicates an area that has been selected for motion detection.

When motion is detected, the LIVE VIDEO page will display a blinking orange motion video icon like the one below.

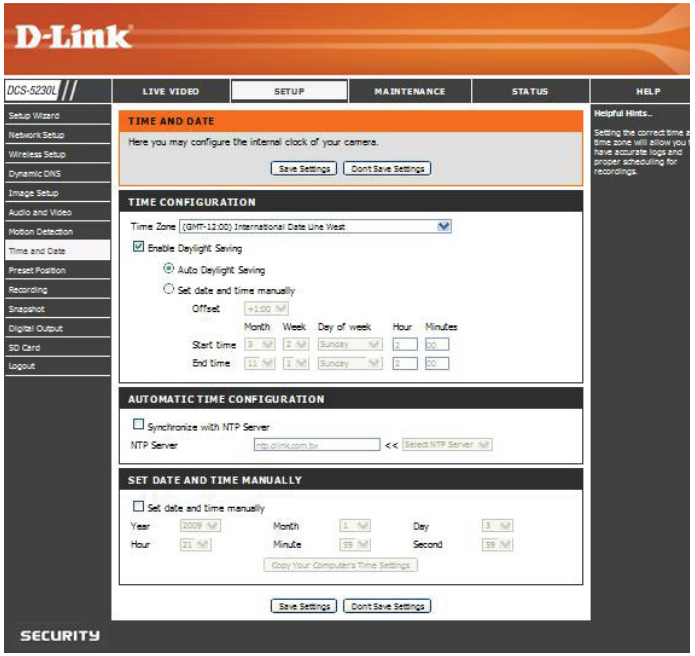
No Motion

Motion

The motion notification will continue to blink as long as motion is detected. If no additional motion is detected, it will return to its original state after eight seconds.

Time and Date

This option allows you to configure, update, and maintain the correct time on the internal system clock. From this section you can set the time zone that you are in and set the NTP (Network Time Protocol) Server. Daylight Saving can also be configured to automatically adjust the time when needed.



Time Zone: Select your time zone from the drop down menu.

Enable Daylight Saving: If your region uses a Daylight Saving adjustment, check this checkbox.

Auto Daylight Saving: This option will adjust Daylight Saving Time automatically.

Set date and time manually: Selecting this will let you set the Daylight Saving Time adjustment manually:

- **Daylight Saving Offset**: This will set the Daylight Saving adjustment that will be used.
- **Daylight Saving Date**: This will set the beginning and ending dates of the Daylight Saving period.

You can also have the camera's clock set automatically, or manually.

Synchronize with NTP Server: Checking this checkbox will allow the camera to synchronize its clock with an NTP server.

NTP Server: Use the dropdown box to the right to select an NTP server to use, or you can type one in.

Set date and time manually: Check this checkbox to set the time and date manually. You can then use the dropdown boxes to select the current **Year**, **Month**, **Day**, **Hour**, **Minute**, and **Second**. You can also click the **Copy Your Computer's Time Settings** button to automatically fill in the dropdown boxes with the current time and date from your computer.

After making any changes, click the **Save Settings** button to save your changes, or click the **Don't Save Settings** button to discard your changes.

Preset Position/Camera Control

Click the **Preset Position** button from the left side of the Setup screen to access settings that affect how the DCS-5230L Internet Camera can pan and move to preset locations.

Pan Speed: Select the speed at which the camera will pan for a full cycle from the drop-down list. Select a value between 0 and 10, 0 being the slowest setting.

Tilt Speed: Select the speed at which the camera will tilt for a full cycle from the pull down menu. Select a value between 0 and 10, 0 being the slowest setting.

Pan/Patrol Speed: Select the speed at which the camera will pan during auto patrol. Select a value between 1 and 3, 1 being the slowest setting.

Current Position: Enter a name for the position at which you would like to preset the DCS-5230L. Click **Add** to add the new preset position to the Preset Locations list.

Preset Position: Using the drop-down list, you can choose and delete a preset position by selecting it and clicking **Delete**.

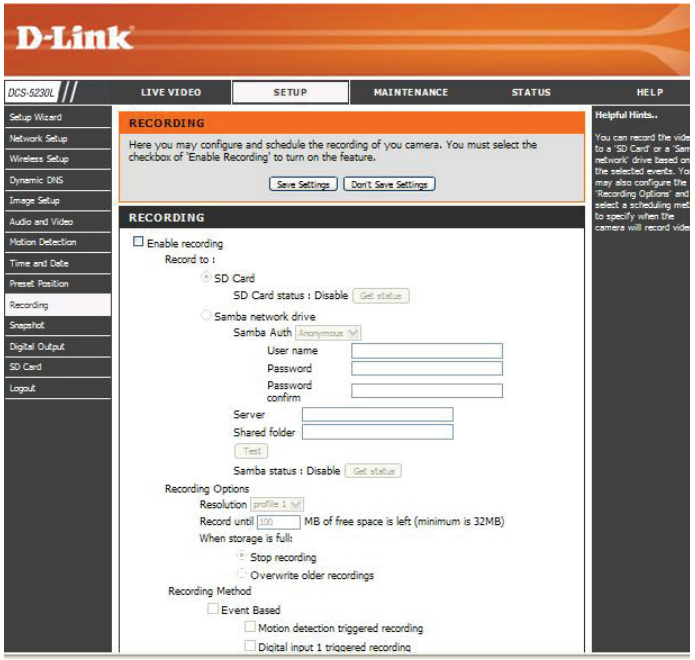
Dwelling Time: Specify the number of seconds that the camera should remain fixed upon a specified preset position.

Set as Home: Use the **Set As Home** button to set the current position as the home position. The Home position is the first position the camera goes to after the camera boots. You can also recall the default home position, use the **Default Home** button.

Patrol Selection: To use the Auto Patrol feature, select the desired preset positions from the Preset Locations list and add them to the Selected Locations list by clicking **Select**. You can then select the order in which the camera will patrol through the preset locations by selecting a location and clicking **Up** or **Down**. Click **Remove** to remove a location from the list.

Recording

This option allows you to configure recording settings and scheduling. You can record video to a Samba network drive on your local network.



Enable recording: Check this checkbox to enable the recording feature. After enabling recording, you will need to select a scheduling method.

SD Card: Select this option if you have inserted an available SD card into the camera.

Samba Network drive: Select Anonymous if no user name or password is required to access your Samba drive. If you require a user name and password to log in to your Samba drive, select **Account** and fill in the following information:

User name: Enter the user name required to access your Samba drive.

Password: Enter the password required to access your Samba drive.

Password confirm: Re-enter the password required to access your Samba drive for verification.

Server: Enter the name or the IP of the server your Samba drive is located.

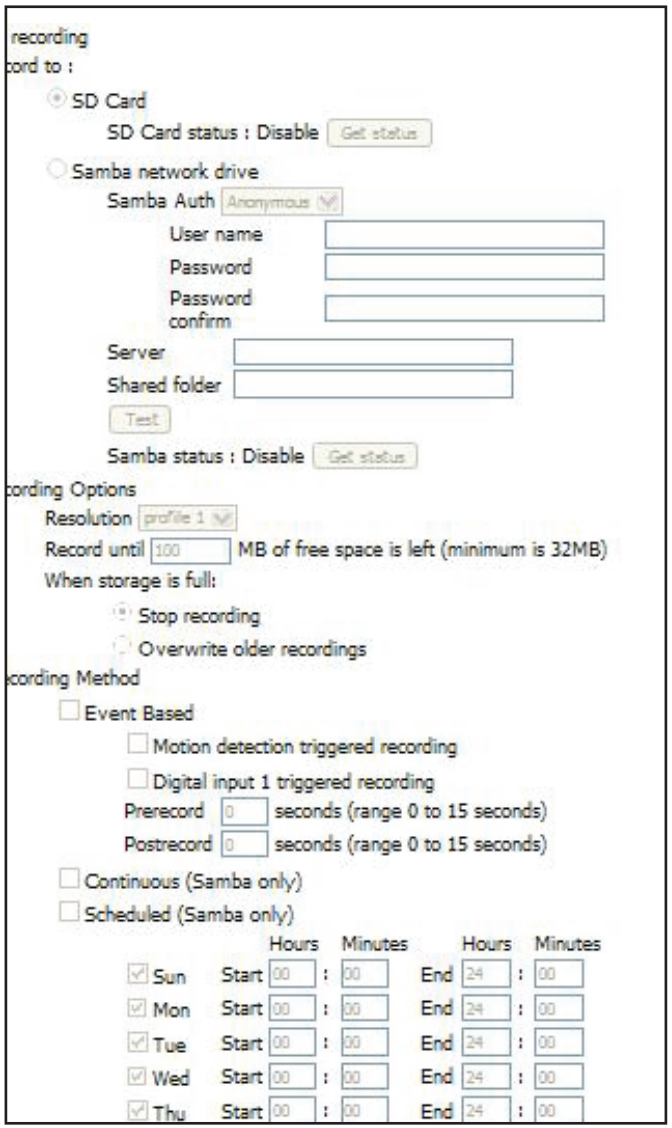
Shared Folder: Enter the name of your shared folder.

Test: Click this button to make a connection to the Samba network drive, and it will let you know if the settings work.

Note: *You can create a simple Samba network drive on your Windows PC by right-clicking a folder, selecting* ***Sharing and Security…****, and selecting* ***Share this folder****. Enter a* ***Share name*** *you would like to use for the folder, then click the* ***Permissions*** *button and check the box for* ***Full Control / Allow*** *for the* ***Everyone*** *group. For your camera's Recording settings, use Anonymous for the Samba Auth, your computer's IP address for the Server, and the Share name you chose for the Shared Folder. Click on the Test button to test your settings.*

Please note that when creating a simple network drive like this, all users on your local network will have access to the contents of this folder.

Recording Options



Resolution: This will let you set which video profile you wish to use to record video. Please note that if the bitrate (bps) of the video profile is higher than your Samba network drive's throughput, the recording's framerate (FPS) may be reduced.

Record until: You can use this setting to adjust how much free space must remain when recording. It is suggested that you set this to at least 32M to allow for enough buffer space for the camera to record with.

When storage is full: When your storage device is full or has reached the free space limit specified in Record until, you can choose to stop recording, or you can have the camera delete old recordings to free space for new recordings to be saved.

Event Based: Event based recording will allow you to record video when specific events happen.

Motion detection triggered recording: Enabling this option will set the camera to record video when motion is detected by the camera.

Prerecord: This will set how many seconds of video before the event takes place will be recorded.

Postrecord: This will set how many seconds of video after the event takes place will be recorded.

Example: Using motion detection triggered recording and setting Prerecord to 5 seconds and Postrecord to 9 seconds, the camera will save video from 5 seconds before motion was detected to 9 seconds after motion was detected.

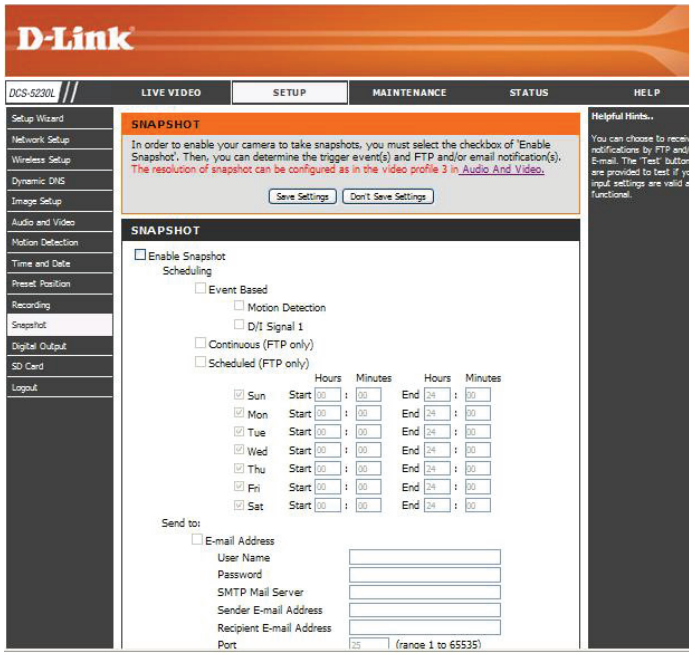
Continuous: This will set the camera to record continuously.

Scheduled Recording: This will set the camera to automatically record video during the specified times in the table below.

After making any changes, click the **Save Settings** button to save your changes, or click the **Don't Save Settings** button to discard your changes.

Snapshot

Here, you can set the camera to take snapshots when motion is detected. Snapshots can be sent to an e-mail address and/or to an FTP server.



Enable Snapshot: Check this box to enable the snapshot feature.

Event Based (Motion Detection): This will set the camera to take a snapshot whenever motion is detected.

Continuous (FTP only): This will set the camera to take snapshots continuously at intervals specified in **FTP Server > Interval** below. You can only save to an FTP server when taking continuous snapshots.

Scheduled (FTP only): This will set the camera to take snapshots continuously at intervals specified in **FTP Server > Interval** below according to schedule you define by checking days and entering the times you want to record between. You can only save to an FTP server when taking scheduled snapshots.

E-mail Address: When checked, the camera will send the snapshots it takes to the e-mail address specified in the following text boxes. If you do not know what to enter for the User Name, Password, or SMTP Mail Server, contact your e-mail service provider for details.

User Name: Enter the username or login name for your e-mail account.

Password: Enter the password for your e-mail account.

SMTP Mail Server: Enter the SMTP server for your e-mail account.

Sender E-mail Address: Enter the e-mail address you want to appear as the “From:” e-mail address in the snapshot e-mail.

Recipient E-mail Address: Enter the e-mail address you want to send your snapshots to.

Port: Enter the port used by your SMTP server.

FTP Server: When checked, the camera will send the snapshots it takes to the e-mail address specified in the text fields. If you do not know what information to enter, contact the administrator of the FTP server for details.

User Name: Enter the User Name of your FTP account.

Password: Enter the Password of your FTP account.

Host Name: Enter the Host Name of your FTP account.

Path: Enter the file path to the location on the FTP server you want to send snapshots to.

Filename Prefix: Enter the prefix you want to attach to your snapshot files.

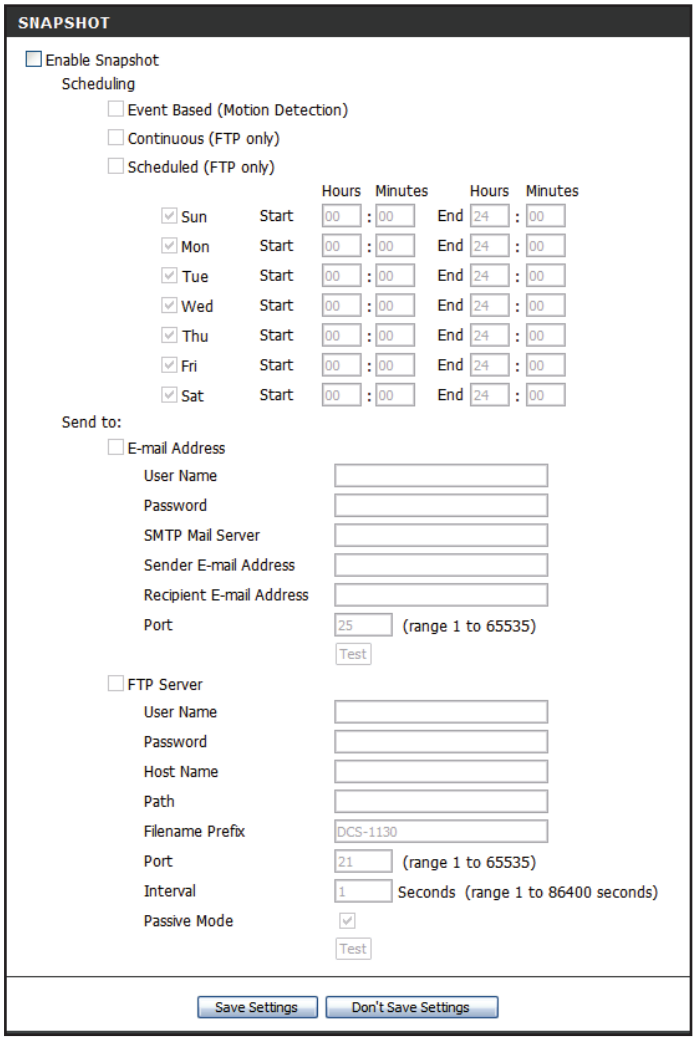
Port: Enter the port used by the FTP server.

Interval: Enter the time interval the camera will wait before taking a new snapshot.

Passive Mode: If your FTP server requires you to use passive mode, check this box.

Test: Clicking this button will take a snapshot and will try to upload it to your FTP server using the settings you have entered.

After making any changes, click the **Save Settings** button to save your changes, or click the **Don't Save Settings** button to discard your changes.

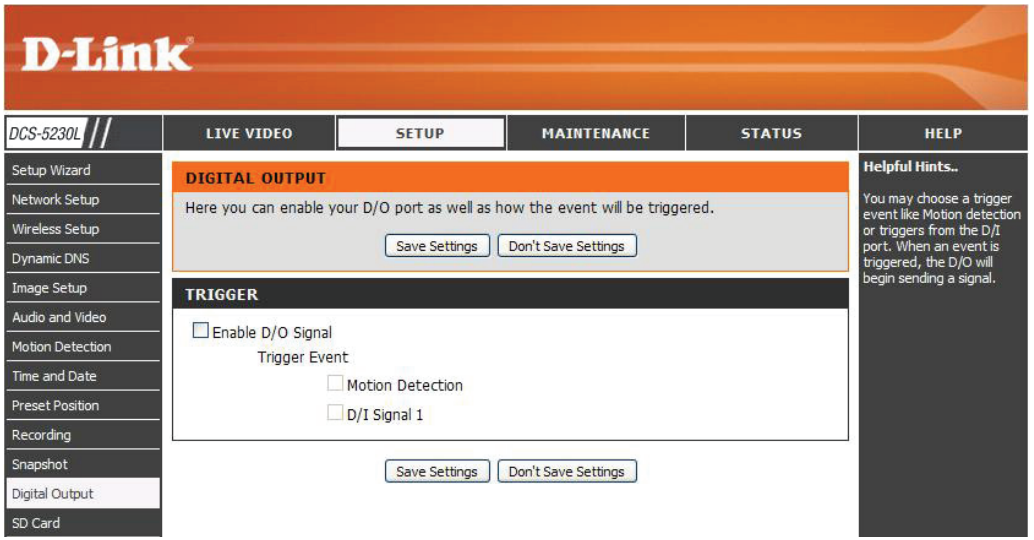


Digital Output

You can enable the digital output port as well as configure the trigger event.

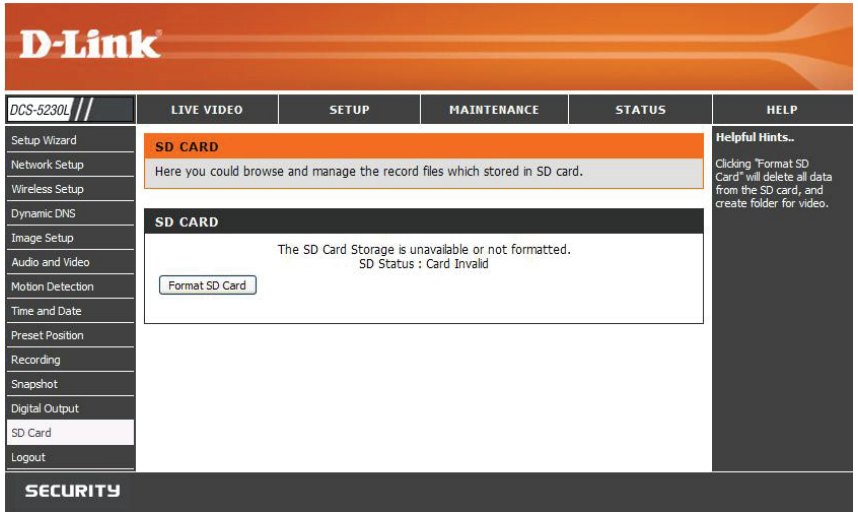
Motion Detection: When a motion detection is triggered.

D/I Signal 1: A trigger from the Digital Input port.



SD CARD

Clicking “Format SD Card” will delete all data from the SD card, and create folder for video.



Format SD Card: To format the SD card. Delete all data from the SD card.

Name: The name of file or catalog.

Num of files: The amount of files in catalog.

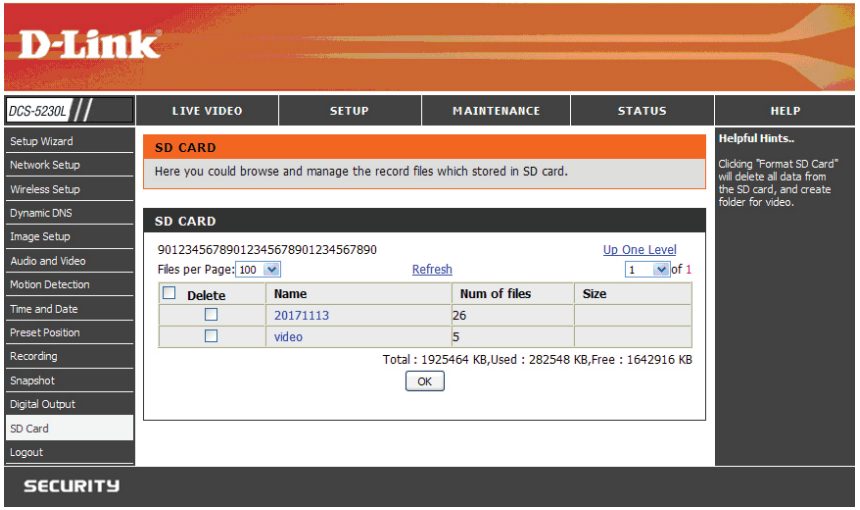
Size: The file’s size.

Refresh: Click it reload data to webpage.

Top Level: Click it go back to previous level.

Delete: Click this button to select all the files below.

OK: Click this button to delete the selected files above.



Maintenance

Admin

Here you can change the Admin password, add and manage Users, and adjust some camera settings.

Admin Password Setting: This section lets you change the admin password used to log in to the camera and adjust settings. After installing the camera for the first time, it is highly recommended that you change the admin password for security purposes.

New Password: Enter the new admin password.

Retype Password: Enter the new admin password again for verification. After entering the new password again, click on the **Save** button to save your changes.

Add User Account: Admin can create user accounts to allow others to log in to your camera to view the live camera feed.

User Name: Enter the User Name you wish to use for the new user account.

New Password: Enter the password for the new user account.

Retype Password: Re-enter the password for the new user account for verification. After entering the password again, click **Add** to add the new user account.

User List: Here, you can view the current list of users by using the dropdown box. You can also delete a user by selecting them with the dropdown box, and then clicking the **Delete** button.

Device Setting: Here, you can change various other settings for your camera.

Camera Name: Enter the name of your camera.

Enable OSD: This will enable the information bar On Screen Display (OSD) to appear when viewing video.

Label: This is the text label that will appear on the OSD.

Show time: If checked, the current time will be displayed on the OSD.

LED light: This will turn the camera's front LED indicator on or off.

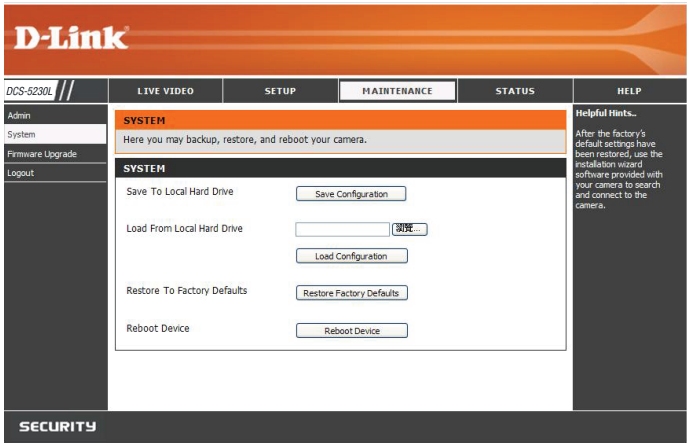
Calibrate the Device: Clicking this button will calibrate the camera so that the P/T/Z apparatus functions correctly. The camera is automatically calibrated whenever it is powered on and initialized or reset. Should the camera's pan, tilt, and zoom functions begin to behave incorrectly, or if the device has been jarred or handled improperly, you may need to recalibrate the camera manually by pressing this button.

Privacy Mode: Select on/off or schedule the privacy mode for your camera to ensure the privacy. When the privacy mode is turned on, the camera hides the lens by rolling it back into the unit.

After making any changes to this section, click the **Save** button to save your changes.

System

This screen allows you to save and restore the camera's current configuration. You can also reset all settings to factory default or reboot the device.



Save To Local Hard Drive: Click on the **Save Configuration** button to save the current configuration to a hard drive.

Load From Local Hard Drive: To load a saved configuration, click on the **Browse** button to select a configuration file from your hard drive. Then, click the **Load Configuration** button to load the new configuration.

Restore To Factory Defaults: Click this button to reset all settings to their factory defaults. If you choose to reset your settings, you will need to set up your camera again.

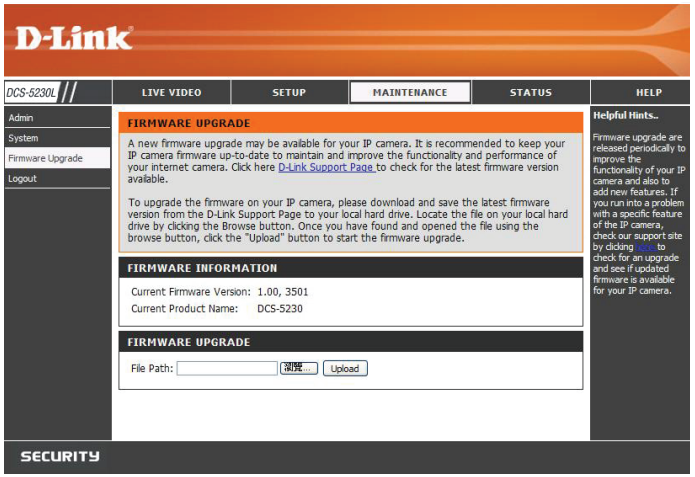
Reboot Device: Clicking the **Reboot** button will reboot your device.

Firmware Upgrade

Your current firmware version and date will be displayed on this page. Here, you can also upgrade your firmware with a new version.

Firmware upgrades are made available at **support.dlink.com**.

To upgrade your firmware, go to **support.dlink.com.tw** and download the latest firmware to your computer's hard drive. Click on **Browse**, select the firmware file, then click the **Upload** button. While the firmware is being upgraded, do not turn off your computer or camera, and do not disconnect your network connection from your computer or camera. Upgrading the firmware will not change any of your system settings, but it is recommended that you save your system configuration before doing a firmware upgrade.

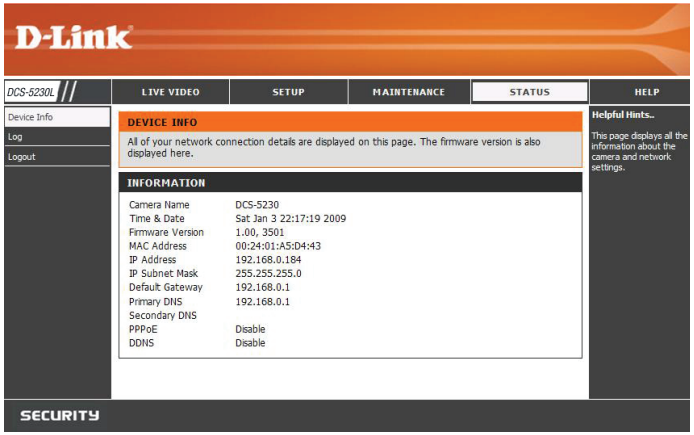


Note: *It is recommended that you use a wired connection for your computer and camera when upgrading the firmware.*

Status

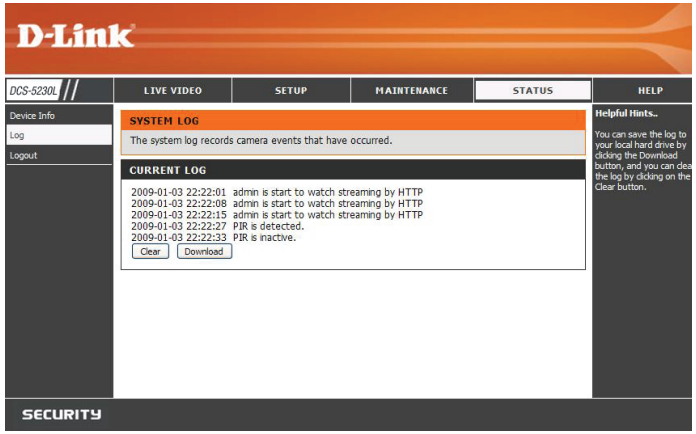
Device Info

This screen shows you various information about your camera and its current settings.



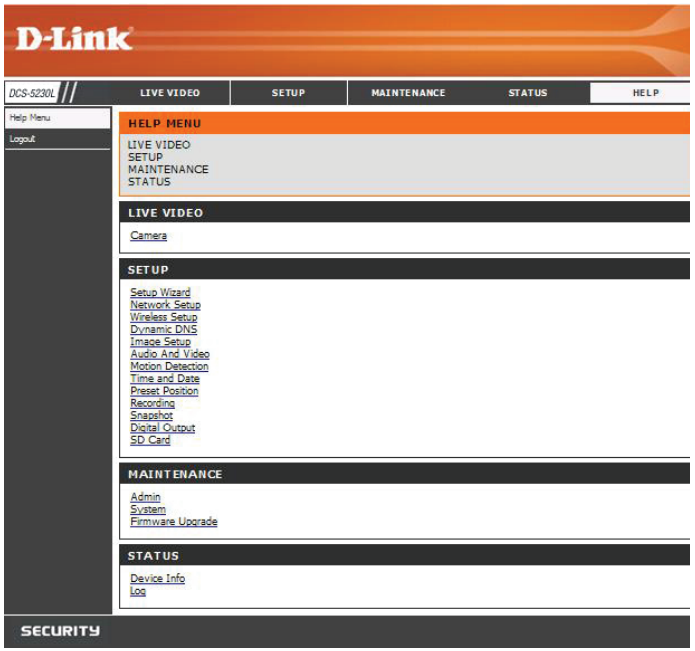
Log

The log shows you a list of events that have happened recently. You can download the log by clicking the **Download** button, or you can empty the log by clicking the **Clear** button.



Help

The Help screen provides you with support information about the DCS-5230L for your reference.



Troubleshooting

1. What can I do if I forget my password?
If you forget your password, you will need to perform a hard reset of your camera. This process will change all your settings back to the factory defaults.

To reset your camera, please use an unfolded paperclip to press and hold the **RESET** button for at least 6 seconds while your camera is plugged in.

Please note that this will also remove the camera from your mydlink account, so you will need to add it back to your account later.

2. In addition to using mydlink.com, is there another way to access my camera remotely over the Internet?
Yes, you can access your camera over the Internet through the following URL after successfully installing your camera through the Camera Setup Wizard:

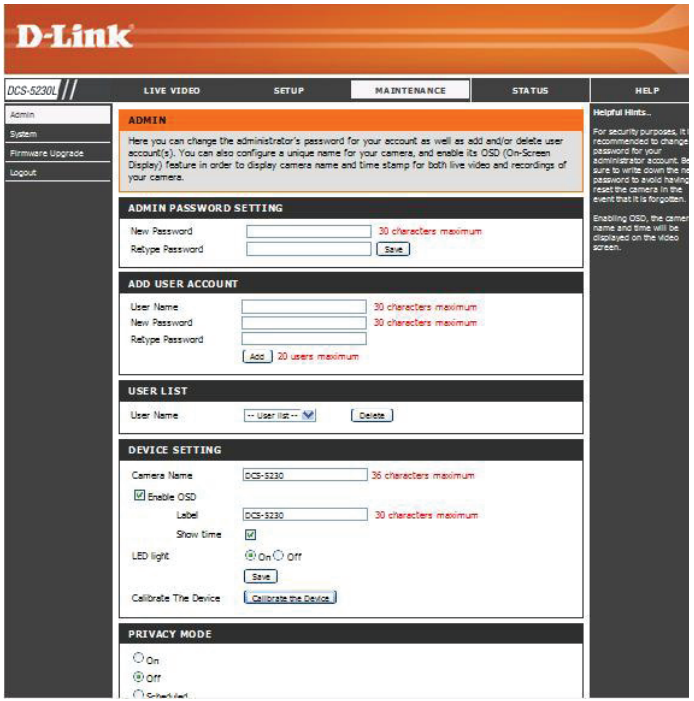
http://[mydlink No.].dev.mydlink.com

For example, if your camera's mydlink No. was 12345678, you would be able to access your camera remotely by opening your web browser and going to http://12345678.dev.mydlink.com

This URL will open your camera's web interface, where you can sign in and configure your camera's settings.

Installing Camera on a Router Without UPnP

If you connect your camera to an Internet router that does not support UPnP, you can assign your camera to a DMZ connection on your router. For more details, refer to your router's User Manual for more details on configuring your camera to use a DMZ connection.



If you have multiple cameras you wish to connect, or if you do not want to use DMZ, follow these steps to allow multiple remote access to your cameras:

1) Identify your camera on the network
2) Assign a local IP address and port for your camera
3) Determine your router's WAN IP Address (Enable Remote Viewing)
4) Open virtual server ports for your router (Enable Remote Viewing)

1) Identify Your Camera on the Network

- Log in to your camera's web interface from a computer on the same local (home) network
- Click on the **MAINTENANCE** tab, and select **Device Management**
- Enter a unique **Camera Name** for your camera

Note: *Giving your camera a unique name is important when setting up multiple cameras on your network.*

2) Assign an IP Address and Port for Your Camera

- Click on the **SETUP** tab, and select **Network Setup**

A local IP address is required to configure your camera and to view your camera within your local network. You may use the default camera IP address of 192.168.0.20. If you wish to use a different IP address, be sure that the camera settings correspond to your network settings. The **Default Gateway** will be the IP address of your router's local IP address (e.g.192.168.0.1, if you are using a D-Link router).

3) Open the HTTP Port

The **HTTP port** option under **Port Detail Settings** is used when multiple cameras are being installed behind a single public IP address and will be accessed remotely OR for using a port other than the default port for image viewing. For each additional camera that is installed, you must assign the appropriate Web server port for each camera to enable remote viewing.

By default, port 80 (Web server port) is open. If these ports are available for use, you DO NOT have to open a second port and can proceed to the next section.

If port 80 is not available (for example, if you are already using port 80 to run a Web server or your ISP blocks access on port 80), you MUST open a second port and designate a new Web server port (800, 801, 802, etc.). Similarly, if port 554 is not available, you will need to open a different port for RTSP.

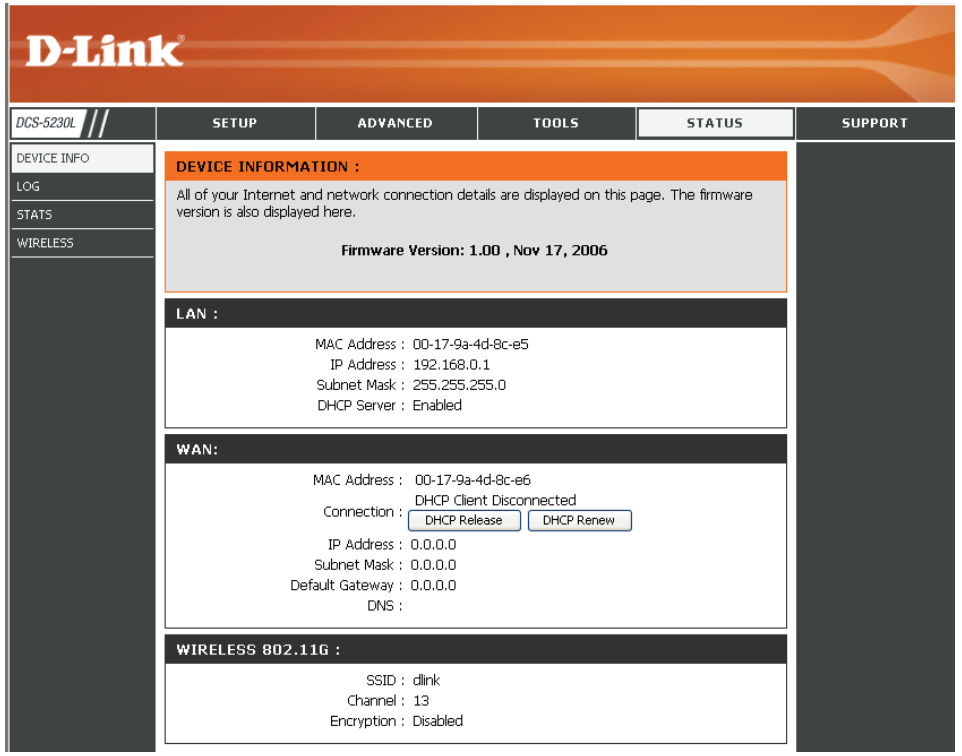
Note: *Be sure to take note of these settings since these same settings will be used to configure your router.*

Note: *Some ISPs block traffic on commonly used ports like port 80 to disallow consumers from putting a server on their network. Be sure to check with your ISP so that you can open the appropriate ports accordingly. If your ISP does not pass traffic on port 80, you will need to change the Web server port the camera uses from 80 to something else, like 800. If you are behind a residential gateway, you will need to open a corresponding port on your gateway as well. Not all gateways are the same. Please refer to your gateway's user's manual for specific instructions on how to forward ports.*

Router Setup

The following steps generally apply to any router that you have on your network. The D-Link DIR-301 is used as an example to clarify the configuration process.

Note: *Because a dynamic WAN IP address can change from time to time depending on your ISP, you may want to obtain a Static IP address from your ISP. A Static IP address is a fixed IP address that will not change over time and will be more convenient for you to use to access your camera from a remote location. You can also use DDNS to obtain an IP address. Please refer to page 23 for more information.*



4) Use Port Forwarding to Enable Remote Image Viewing

You will need to use port forwarding on your router to open ports for remote access to your camera. This is sometimes referred to as Virtual Server Settings. Please proceed as follows:

- Go to the **Port Forwarding** section of your router.
- Enter a **Name** for the port forwarding rule, such as your camera name.
- Enter your camera's IP address in the private/local IP field.
- Select **TCP** under **Traffic Type**.
- Enter the **HTTP port** your camera is set to use in the **Start** and **End** settings.

Note: *If you are using more than one camera, you will need to select a different public port for each camera. If you cannot use port 80 for your public port (for example, if you are already running a web server), select a different public port for your camera.*

- In the Port Forwarding list, a check mark appearing before the camera name will indicate that the port forwarding rule is enabled.
- Click **Save Settings** to save your settings.

You will need to repeat these steps to open an RTSP port for your camera (port 554 by default).

Viewing Your Camera Over the Internet

After all settings have been entered correctly, a user inside or outside your network will have access to the camera through a standard Web browser. To access your camera, simply type in the IP address of the router given to you by your ISP, a colon, and the HTTP port number that you gave your camera.

http://<ip address>:<port>

To access your camera's video streams directly, open your PC's/device's web browser or media player and type in the IP address of the router given to you by your ISP, a colon, the RTSP port number that you gave your camera, then the type of video stream you want to view as follows:

3GPP stream (mobile phone / pda): rtsp://<ip address>:<port>/3gpp
MPEG-4 stream (PC): rtsp://<ip address>:<port>/ play1.sdp
MJPEG stream (PC): rtsp://<ip address>:<port>/ play3.sdp

To access your camera from a computer on your local (home) network, simply enter the local IP address of your camera (i.e. 192.168.0.35). If using a port other than port 80, you must enter the IP address followed by a colon and the assigned port number.

Note: *If your camera is connected to the Internet, you can also use the Camera IP given to you on the stickers inside your box.*

Viewing Your Camera Over the Internet Behind a Router

If you want to view one of your cameras over the Internet and your PC is behind a router or firewall, you may also need to activate port triggering. This will allow you to open the necessary ports in order to view video from your camera. Consult your router/firewall's User Manual, and use the following information to set up port triggering:

- Port trigger: 554 (if you have changed the RTSP port on your camera, use that number here)
- Ports to open: 6970-6990

Technical Specifications

System Requirements

- Operating System: Microsoft Windows® 2000, XP, Vista
- Browser: Internet Explorer, Firefox, Opera

Networking Protocol

- IPv4, ARP, TCP, UDP, ICMP
- DHCP Client
- NTP Client
- DNS Client
- DDNS Client
- SMTP Client
- FTP Client
- HTTP Server
- Samba Client
- PPPoE
- RTP
- RTSP
- RTCP
- 3GPP
- UPnP Port Forwarding

LAN

- 10/100BASE-TX port
- IEEE 802.3 compliant
- IEEE 802.3u compliant
- Supports Full-Duplex operation
- MDI/MDIX auto-negotiation
- 802.3x Flow Control support for Full-Duplex mode

Wireless Connectivity

- 802.11g/n Wireless with WEP/WPA/WPA2 Security
- WPS Support

Sensor

- ¼ inch color VGA CMOS Sensor

Lens

- Focal length: 5.01mm, F2.8

Microphone

- Signal/noise ratio: 40dB +/- 3dB, Omni-directional

Reset Button

- Reset to factory default

Video Codec

- MPEG-4/MJPEG simultaneous dual-format compression
- JPEG for still image

Video Features

- Adjustable image size and quality
- Time stamp and text overlay
- Flip and Mirror
- Fully configurable motion detection window

Video Resolution

- VGA (640 x 480):
  640 x 480 at 30fps
  320 x 240 at 30fps
  160 x 120 at 30fps

- XGA (1024 x 768)
  1024 x 768 at 10fps
  512 x 384 at 10fps
  256 x 192 at 10fps

- SXGA (1280 x 1024)
  1280 x 1024 at 10fps

Audio Codec
- GSM-AMR: 12.2Kbps
- PCM: 8Kbps

Light Sensitivity
- 1 lux@F2.8

Digital Zoom
- Up to 16X

3A Control
- AGC (Auto Gain Control)
- AWB (Auto White Balance)
- AES (Auto Electronic Shutter)

Power
- Input: 100-240VAC, 50/60Hz
- Output: 5VDC, 2.5A
- Powered by an external power adapter
- Maximum power consumption
  DCS-5230L: 6.3W

Dimensions (WxDxH)
- 120.0mm x 81.5mm x 38.0mm
(without bracket and stand)

Weight
- 280g (without bracket and stand)

Operation Temperature
- 0˚ to 40˚C (32˚ to 104˚F)

Storage Temperature
- -20˚ to 70˚C (-4˚ to 158˚F)

Humidity
- 20-80% RH non-condensing

Emission (EMI), Safety & Other Certifications
- FCC Class B
- IC
- C-Tick
- CE